B O C A G I A N A

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TWO NEW SPECIES OF THE GENUS TARPHIUS ERICHSON FROM THE AZORES AND REDESCRIPTION OF TARPHIUS WOLLASTONI CROTCH (COLEOPTERA : COLYDIIDAE).

By Gösta Gillerfors *

With 11 figures

ABSTRACT. Two new species of the genus *Tarphius* are described viz. *T. depressus* sp. n. and *T. tornvalli* sp. n.. A redescription of *T. wollastoni* Crotch is presented. Lectotype and 15 paralectotypes of *T. wollastoni* Crotch are designated. A key to the known Azorean species is given.

RESUMO. Duas novas espécies do género *Tarphius* são descritas, *T. depressus* sp. n. e *T. tornvalli* sp. n.. É também apresentada uma redescrição de *T. wollastoni* Crotch. São designados um lectótipo e 15 paralectótipos de *T. wollastoni* Crotch. É também dada uma chave para as espécies Açoreanas conhecidas.

INTRODUCTION

The known distribution of the genus *Tarphius* is the western part of the Mediterranean area, the Atlantic islands (Canary Islands, Madeira, and the Azores) and the western part of South America (Peru and Chile). Only one species of *Tarphius* has hitherto been recorded from the Azores viz. *wollastoni* described by Crotch 1867 after specimens collected by Godman and Brewer in 1865 probably on Faial.

In the summer 1983 I visited the Azores together with Dr. Anders Törnvall and Dr. Gunnar Israelson and his wife. We spent three weeks on

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the islands of São Miguel and Santa Maria. We found a fairly large amount of *Tarphius*-specimens belonging to different species of which Israelson has already described one species, *rufonodulosus* (1984) from Santa Maria. The species on the Azores seem to have some features in common as the order of the nodules on elytra and the general shape of the aedeagus (figs. 4-7). Especially the median sclerite, a sort of flagellum, is different from other known species. This consists of a flat, elongate movable sclerite. In other species it consists of two fine rods united at the base forming an elongate narrow u-shaped construction with a thin membrane between the rods. These external and internal structures may distinguish them from other species to the extent that they could perhaps form a seperate subgenus. Israelson placed them into the subgenus *Atlantomorphus* Franz.

KEY TO AZOREAN SPECIES OF *TARPHIUS*.

1. Body surface sparingly covered with very short and broad obtuse setae about twice as long as broad. (fig. 8). Elytra with pale pattern enclosing nodules. Aedeagus as in fig. 7 ... ... *rufonodulosus* Israelson
— Body surface rather densly covered with rather long, more acute setae, at least 3 times as long as broad. Elytra unicoloured 2
2. Body depressed. Sides of pronotum straight behind middle, only slightly narrowed posteriorly (fig. 2). Elytral setae (fig. 9) almost decumbent. Aedeagus as in fig. 5 ... ... *depressus* sp. n.
— Body convex. Sides of pronotum with at least a short sinuation before hind angles, distinctly narrowed posteriorly. Elytral setae semierect or erect 3
3. Pronotum distinctly narrower than elytra (fig. 3). Elytral setae erect fine and hair-like (fig. 11). Elytral nodules small but distinct. Aedeagus as in fig. 6 ... ... *tornvalli* sp. n.
— Pronotum not or slightly narrower than elytra (fig. 1). Elytral setae rather broad not hair-like (fig. 10). Elytral nodules on an average rather strong. Aedeagus as in fig. 4 ... ... *wollastoni* Crotch

Tarphius wollastoni Crotch 1867 (Figs. 1. 4. 10.)

T y p e l o c a l i t y : The Azores, Faial.

T y p e m a t e r i a l : There are 16 specimens in the British Museum (Nat.Hist.) all bearing the letters c - b in handwriting at the back of the card, 7 of them also bearing the label Azores 99 - 203. They were collected by Godman and Brewer probably on Faial in 1865. I have studied all these specimens. One male dissected by me, with the aedeagus mounted on a slide on the same pin, I have designated lectotype and the remaining ones paralectotypes.

D i a g n o s i s : Recognized by the shape of the pronotum (fig. 1) in combination with large elytral nodules and structure of the male genitalia. (fig. 4).

REDESCRIPTION

C o l o u r . Uniform reddish to reddish brown. Appendages yellowish red.

S i z e . Body length 2.6 - 3.9 mm, width 1.3 - 2.0 mm.

H e a d . Sides before and near eyes parallel, then converging, with small calosities delimited by shallow oblique impressions. Front margin faintly convex, angles rounded off. Surface densely covered with distinct granules with semi-erect, hair-like setae. Eyes small and protruding. Antennae: segment 2 shorter than 3 but longer than 4, 5 slightly shorter than 4, 6 and 7 of equal length and each distinctly shorter than 5, 8 and 9 about as long as broad and each faintly shorter than 7.

P r o n o t u m 1.2 times as broad as long, at middle 1.7 times broader than across front angles and 1.4 times broader than across hind angles. Greatest width about middle. Front margin bisinuate with strongly protruding angles. Sides markedly rounded, slightly more curved anteriorly than posteriorly, before hind angles shallowly sinuated. Hind margin bisinuate, in middle broadly produced rearwards, hind angles angulate. Sides broadly flattened, disc rather convex transversely with a median more or less distinct furrow. Upper surface densely covered with rather small, distinct, apically rounded granules, each with a yellowish red rather broad acuminate seta. Side margins with a dense fringe of acuminate setae.

E l y t r a about 1.7 times as long as pronotum (measured in middle) and slightly longer than broad. Widest part about middle. Sides from middle weakly curved to shoulders, these not prominent. Base broadly sinuated in middle and slightly near shoulders, feebly oblique laterally. Side margins crenulated, visible from above only anteriorly. Disc rather strongly convex transversely and also slightly longitudinally. Sides steeply sloping. Punctures on upper surface coarse and deep in rather distinct rows. Interspaces small, elevated and somewhat granulated, causing evident transverse rugosity. Elytral sculpture fainter towards apex. At base in sixth intervals with small distinct foveas. Setae conspicuous, in rather distinct rows, semi-erect, reddish, rather broad and acuminate (fig. 10). Nodules well marked (except in small specimens), densely covered with acuminate erect setae. Order of nodules: 3 in the third interval, one very elongate at base, reaching to about third part of elytra, one behind middle and one sub-apically; 3 in fifth, one elongate at base, one just behind middle and one at beginning of apical declivity; 2 in seventh, one in middle and one behind; 1 in ninth interval on side near apex.

A e d e a g u s (fig. 4) About 4.5 times as long as widest part. Median lobe rounded and short. Flagellum apically dilated, widest part about 1.5 times as broad as in middle. Narrow interspaces between dilated subapical part of flagellum and free portion of parameres.

Tarphius depressus sp. n. (Figs. 2. 5. 9.)

Type locality: The Azores, Santa Maria, Pico Alto.

Type material: Holotype ♂, the Azores, Santa Maria, Pico Alto, 6.VIII.1983, leg. G. Gillerfors, in coll. Museu Municipal do Funchal, Madeira. — Paratypes: 43 specimens, same locality and date, 2 specimens, same locality but 4.VIII.1983, in coll. Gillerfors.

Diagnosis: Diagnostic for this species is the depressed body surface, the form of pronotum (fig. 2) which has the sides nearly straight in basal half and only slightly narrowed posteriorly and the structure of the male genitalia (fig. 5).

Colour: Body uniform reddish brown or nearly so, appendages reddish yellow.

Size. Body, length 2.5 - 4.3 mm, width 1.3 - 2.3 mm.

Head. Form, sculpture and vestiture as in *wollastoni* but somewhat broader. Antennae: segment 2 shorter than 3, 3 distinctly longer than 4, 5 a little shorter than 4, 6 shorter than 5, 7 - 9 about as long as broad and each shorter than 6.

Pronotum 1.4 times as wide as long, in middle just a little broader than across hind angles. Greatest width slightly before middle. Anterior margin bisinuate with strongly protruding and acuminate angles. Side margins weakly rounded anteriorly, posteriorly subparallel. Hind margin bisinuate, in middle broadly produced rearwards, angles almost right. Sides broadly flattened, disc moderately convex and laterally less steeply sloping, in middle with a narrow longitudinal furrow. At base a fine transversal furrow. Upper side covered with almost flat granules, each with a reddish more or less semi-erect somewhat obtuse seta. Side margins with a dense fringe of rather long and somewhat acuminate setae.

Elytra about 1.5 times as long as pronotum and about as long as broad, at shoulders distinctly broader than pronotum at hind angles. Sides anteriorly parallel or sometimes slightly sinuated just behind shoulders. Base sinuate near shoulders and in middle. Shoulders angulate. Disc broadly flattened, sides steeply sloping. Side margins weakly crenulated, faintly visible from above almost to apex. Upper surface somewhat rugose. Punctures deep in well marked rows, intervals narrow, feebly granulated. Evidently covered with reddish, recumbent, somewhat abtuse setae in indistinct rows. Nodules moderately developed, rather densly setiferous shaped as in *wollastoni* and also in same order.

Aedeagus (fig. 5). About 5.5 times as long as widest part. Median lobe rounded and short. Flagellum apically dilated, widest part about 1.9 times as broad as in middle. Sides of dilated subapical part of flagellum covering inner sides of free portion of parameres.

BIONOMICS

In the forest of desiduous trees on and around Pico Alto under the bark of dead stems and branches (often with fungus) of *Acacia, Pittosporum, Pinus* and probably other trees.

Tarphius tornvalli sp. n. (Figs. 3. 6. 11.)

Type locality: The Azores, São Miguel, Pico Longo.

Type material: Holotype, ♂, the Azores, São Miguel, Pico Longo, 8.VIII.1983, leg. and in coll. A. H. Törnvall, Göteborg, Sweden. Paratypes: 1 ♂ and 1 ♀, same locality and date, in coll. Törnvall and Gillerfors, Varberg, Sweden.

Derivation of name: Named after my friend A. H. Törnvall.

Diagnosis: Separated from other species by its strongly arched body and small pronotum which is distinctly narrower than elytra (fig. 3) in combination with the shape of elytral setae (fig. 11) and the male genitalia (fig. 6).

Colour. Upper surface uniform reddish to reddish brown. Appendages yellowish red.

Size. Body, length 2.8 - 3.1 mm, width 1.6 - 1.8 mm.

Head. Sides before eyes rounded with somewhat elevated callosities, delimited by curved fine furrows. Anterior margin evidently rounded. Surface with moderately dense, apically rounded granules with semi-erect, fine hair-like setae. Eyes small and protruding. Antennae: segment 3 distinctly longer than 2 and about 1.5 times longer than 4, 4 and 5 of equal length, 7 - 9 as broad as long.

Pronotum 1.4 times as broad as long. Widest part in middle. Anterior margin strongly bisinuate with strongly protruding and sharply acuminate angles (fig. 3). Side margins moderately rounded, shallowly sinuate just before hind angles. Hind margin bisinuate, in middle broadly produced rearwards, angles prominent. Disc distinctly convex transversely with a fine median longitudinal furrow. At base a fine distinct transverse furrow. Sides not so broadly flattened as in other Azorean species. Upper surface with distinct apically rounded granules, more scattered on sides, each with a more or less erect hair-like seta. Side margins with a dense fringe or fairly long, fine and acuminate setae.

Elytra almost as broad as long, conspicuously broader than pronotum. Base bisinuate, sides almost parallel in anterior half, weakly crenulated and visible only anteriorly. Disc strongly arched, deeply and coarsly punctured, fainter towards apex. Punctures in adjacent striae confluent to a high degree, interspaces somewhat elevated, causing pronounced transverse rugosity. At base near shoulders with a small oblique impression. Setae reddish, erect, hair-like and acuminate. Nodules seti-

ferous, small but distinct. Order of nodules as in *wollastoni* but only 2 in third interval, the subapically one is missing.

Aedeagus (fig. 6) Median lobe narrowly pointed, about one third as long as free portion of parameres. Flagellum narrowly pointed apically, basal part thin and hardly visible.

BIONOMICS

Under the bark of a stump of *Laurus azoricus*.

Remarks. On São Miguel, for instance at Furnas, a form rather similar to *wollastoni* exists, but it differ somewhat in the shape, for example in that of pronotum. Also the structure of the aedeagus is somewhat different, being more similar to that of *depressus* sp. n.. If this form is only a variety or a subspecies of *wollastoni* or a different species is hard to decide for the time being. More material will be needed to come to a satisfactory conclusion.

ACKNOWLEDGEMENTS

I am most grateful to Dr. R. D. Pope, British Museum (Nat. Hist.), London for the loan of the specimens of *Tarphius wollastoni* and to Dr. A. H. Törnvall for having placed his material of *Tarphius tornvalli* at my disposal.

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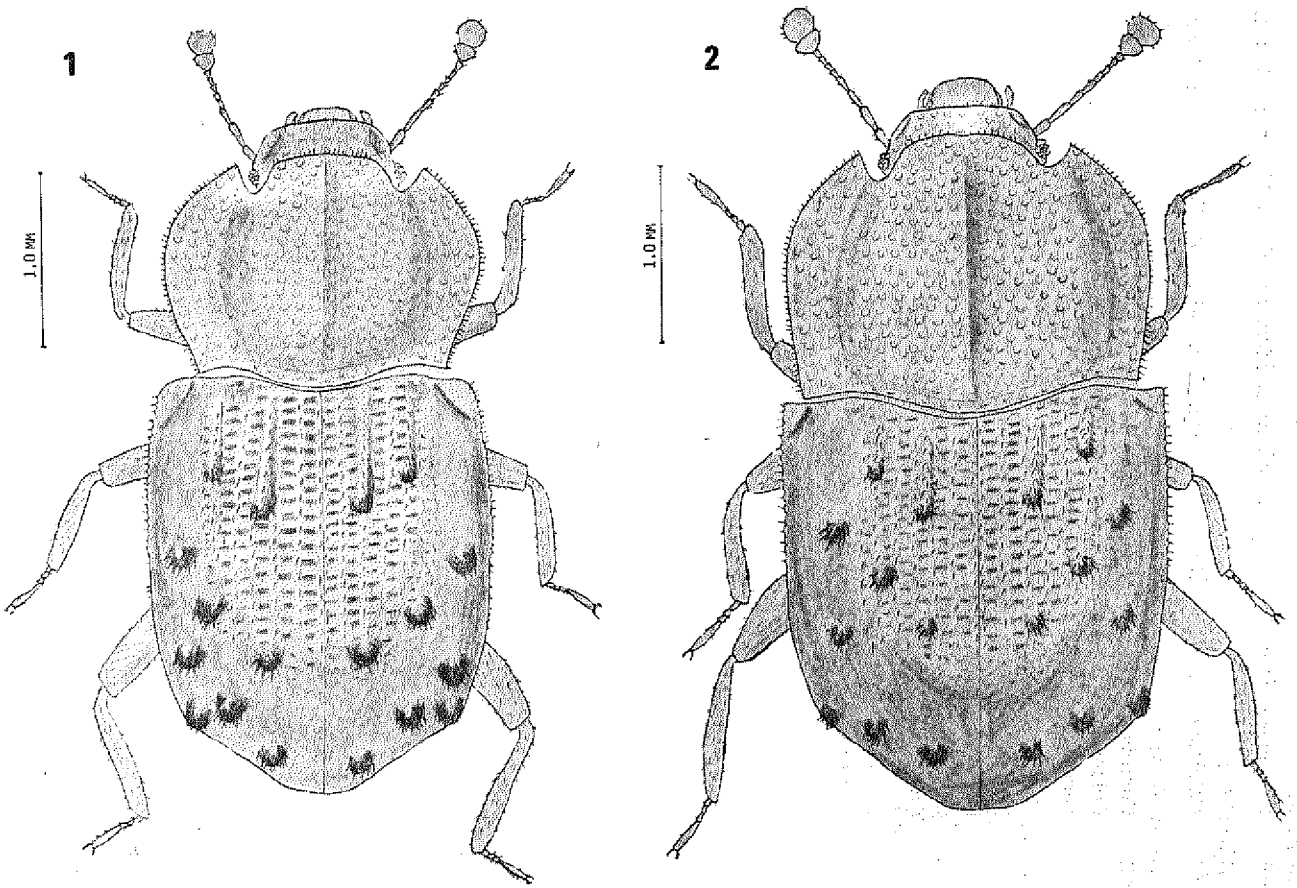


Figs. 1 & 2. — *Tarphius* spp. Habitus. 1. *wollastoni* Crotch. 2. *depressus* sp. n..

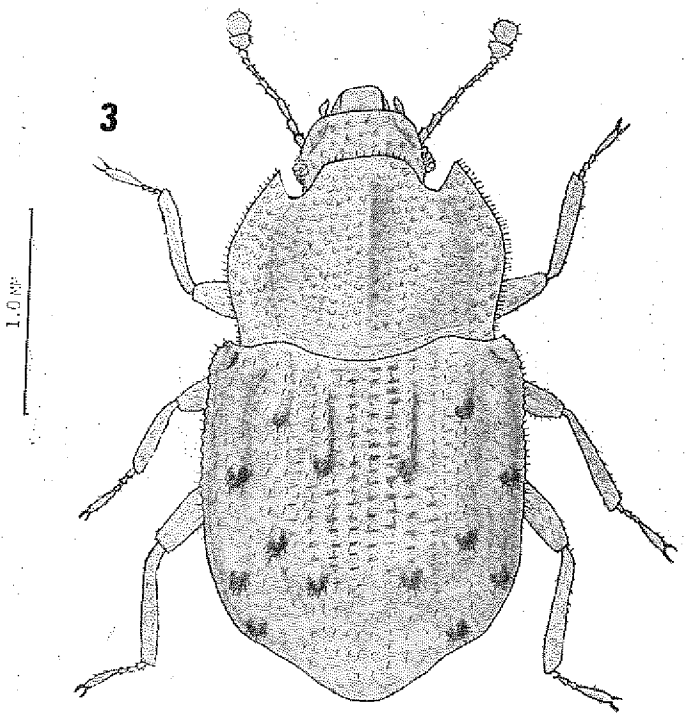
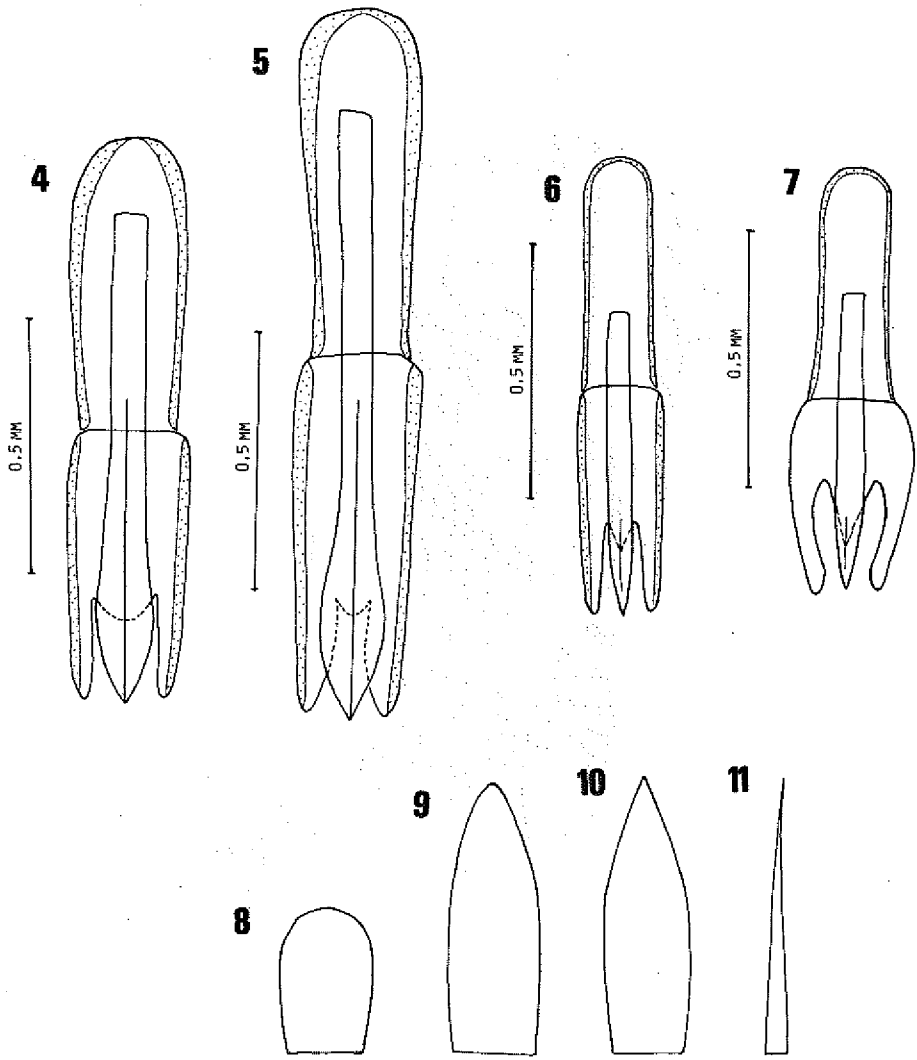


Fig. 3. — *Tarphius tornvalli* sp. n..



Figs. 4-11. — *Tarphius* spp. 4-7. — Aedeagus.. 4. *wollastoni* Crotch. 5. *depressus* sp. n.. 6. *tornvalli* sp. n.. 7. *rufonodulosus* Israelson. 8-11. — Elytral setae. 8. *rufonodulosus* Israelson. 9. *depressus* sp. n.. 10. *wollastoni* Crotch. 11. tornvalli sp. n..

B O C A G I A N A

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NOTES ON TWO MADEIRA PLANTS

By N. C. H. Krauss [1]

The composite plant «Abundância» (*Eupatorium adenophorum* Spreng.) has been known in Madeira for many years. On July 24, 1962 I collected a second species of *Eupatorium*, *E. riparium* Schultz-Bip., confirmed by the Royal Botanic Garden, Kew, England. This was growing in association with *E. adenophorum* in a damp area along a path near Monte. Both these species of *Eupatorium* are native to Mexico. I have seen *E. riparium* growing along a small stream in a ravine at the Desierto de los Leones, Distrito Federal, in the hills above Mexico City. Both species are pests in grazing land in Hawaii.

On November 7, 1960 I collected specimens of *Ulex minor* Roth (determined by Royal Botanic Garden, Kew) in the grassy hills above Ribeiro Frio. Since then I have seen it also at Encumeada and Santo da Serra. *Ulex europaeus* L. has been known in Madeira for a long time, but I have not seen any records of *U. minor*.

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